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| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
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| <input type="checkbox"/> Local-government/district | <input type="checkbox"/> Private party |
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Indicate the type of project (check only one box):

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| <input type="checkbox"/> Planning | <input type="checkbox"/> Implementation |
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By signing below, the applicant declares the following:

- 1.) The truthfulness of all representations in their proposal;
- 2.) The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- 3.) The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Parry Hassen
Printed name of applicant

[Signature]
Signature of applicant

Title Page

**Promoting Stewardship Practices To Reduce Non Point Source Pollution from
Production Agriculture and Urban Centers in the Sacramento/San Joaquin Watersheds
The CURES Approach**

April 1999

Coalition for Urban/Rural Environmental Stewardship (CURES)

Contact: Coalition for Urban/Rural Environmental Stewardship (CURES)

P.O. Box 348711, Sacramento, CA 95834-8711

916-646-9951

916-565-0113 fax

Primary contact: Parry Klassen, 559-325-9855, 559-325-9856 fax, parry@ix.netcom.com

Participants and Collaborators: Coalition for Urban/Rural Environmental Stewardship

Butte County Agricultural Commissioner, Richard Price

California Agriculture Production Consultants Association (CAPCA)

California Almond Board

California Fertilizer Association (CFA)

Colusa County Agricultural Commissioner, Harry Krug

John Taylor Fertilizers, Co., Sacramento

Harvey Lyman Co., Walnut Grove, CA

Helena Chemical Co., Fresno, CA

Merced County Agricultural Commissioner, Michael Tanner

Merced County Farm Bureau

Mid-Valley Ag Services, Inc., Linden

Pest Control Operators of California (PCOC)

Sacramento County Agricultural Commissioner, Frank Earl

Sacramento County Farm Bureau

San Joaquin County Agricultural Commissioner, Scott Hudson

Stanislaus County Farm Bureau

Stanislaus County Agricultural Commissioner, Donald Cripe

Stanislaus County - USDA -Natural Resources Conservation District

Sutter County Agricultural Commissioner, Mark Quisenberry

Target Specialty Products, Santa Fe Springs, Sacramento

Yolo County Agricultural Commissioner, Scott Paulsen

Yuba County Agricultural Commissioner, Dennis Pooler

Western Crop Protection Association

Type of Organization and Tax Status: Non-Profit, 501 (c)(3)

Tax Identification Number: 91-1839291

Executive Summary

Project Title: Promoting Stewardship Practices To Reduce Non Point Source Pollution from Production Agriculture and Urban Centers in the Sacramento/San Joaquin Watersheds

Project Description

The Coalition for Urban/Rural Environmental Stewardship (CURES) seeks to undertake a concerted outreach program in the Central Valley to educate users of pesticides and nutrients about the potential harm these products can cause should they enter the region's waterways. This program will alert growers to the types of farming practices that can contribute to off-site movement of pesticide and nutrient products known or suspected to cause biological harm to CALFED priority species. Through the use of demonstration farms, this program will promote management practices specific to the major crops in the region and adapted to local circumstances, with the aim of preventing non point source pollution from moving into sensitive areas. CURES and its collaborators will work with farmers to implement and improve these practices on a site-specific basis. CURES will also incorporate guidelines for site-specific application, adaptive management and evolutionary improvements in its educational program. Key to success of this program is broad collaborator support and involvement from both ag and urban groups. By successfully implementing this program, the potential exists to dramatically reduce non point source pollution, allowing stressed waterways to be restored to more pristine habit for all species

Size and Location

The targeted area for this proposal is the farming region encompassed by the Sacramento/San Joaquin Delta Ecological Management Zones. This region covers approximately 450,000 acres of irrigated agriculture in Yuba, Sutter, Butte, Colusa, Yolo, Sacramento, San Joaquin, Stanislaus, and Merced counties. It also includes the major urban centers in the region of Sacramento, Modesto, Marysville, Stockton, and Lodi.

Primary Biological/Ecological Objectives

Our biological/ecological objective is to eliminate or reduce the threat of water quality degradation and adverse effects on fish, and the habitat of fish and other species from the beneficial use of pesticide and nutrient products. CURES' program will accomplish this by assisting and encouraging farmers to adopt farming practices and field layout modifications that have been shown to reliably reduce offsite movement of pesticide and nutrient products into waterways. CURES will also work with farmers and urban professionals in an active program of adaptive management to refine and improve such management practices on a site-specific basis. Consequently, such actions will reduce potential damage and stress to the environment caused by these products, while maintaining the positive environmental benefits they provide in invasive pest and noxious weed control in agricultural and urban settings, fulfilling plant nutrient needs, and protecting food quality.

Project Cost

CURES is requesting a total of \$3,333,500 in funding over three years: \$1,178,600 in year 1; \$976,300 in year 2; and \$1,178,600 in year 3. This proposal is designed to be funded on a full or partial basis and is organized in order of priority.

Adverse and Third Party Impacts

Widespread adoption of recommended management practices promoted by CURES would produce many positive impacts for third parties. There should be no adverse impacts. This effort has the potential to reduce offsite transport of pesticides and nutrients in the target region, reducing the potential of adverse impacts to threatened fish populations, which will help improve aquatic life habitat overall.

Applicant Qualifications

CURES is a nonprofit organization formed to promote stewardship of pesticide and nutrient products to various audiences, including farmers and urban citizens.. CURES is currently undertaking a concerted effort to inform Central Valley growers about non point source pollution while promoting use of management practices for protecting water quality. CURES is supported by suppliers of pesticide and nutrient products, who have the most direct, routine contact with farmers, and local farm and commodity organizations. CURES also has support from commercial pest control industry groups, applicators and product distributors.

Monitoring and Data Evaluation

CURES proposes to set up water quality monitoring sites on specific farms to track the ability of certain management practices to remove silt, nutrients and pesticide products from field surface run off. Through adaptive management techniques, farmers can use the monitoring information to assist in developing effective means of removing these materials from water.. This data will be used to identify successful management practices and monitor any reductions in non point source pollution. Written and verbal surveys and other research techniques will also be used to measure the level of understanding among growers and the urban public about the water quality issues. CURES will also survey and track the level of adoption of management practices to protect surface water among targeted audiences.

Local Support/Coordination

CURES will work closely to implement this plan with numerous collaborators list on the title page. These community based collaborators have the most influence with local farmers and are supportive of the projects outlined in this proposal. A steering committee made up of the collaborators will be formed to provide oversight and assist in the effective design and follow through of each project.

Compatibility with CALFED Objectives

This proposal supports the goals of the CALFED Watershed Stewardship Program, facilitating and improving collaboration between government agencies and local farm and industry groups, who ultimately have the best potential to successfully implement these programs in the targeted watersheds. The water quality monitoring proposed for each model farm will enable participants to identify effective farming practices, providing feedback needed for adaptive management decisions. These projects will provide the means for rapidly communicating results to the farming community, helping improve the decision making process for enhancing watershed health. This program will also facilitate information exchange among important audiences and help augment local resource conservation education programs already in place with the USDA-Natural Resource Conservation Districts. Wider adoption of these practices has the potential to improve conditions in the greater watershed of the Bay-Delta system.

Project Description

Proposed Scope of Work

It is the experience of CURES' members and supporters that when informed about potential water quality impacts of particular management practices and presented with economically feasible management alternatives, growers will work to adopt alternatives that correct problems caused by their individual actions. The CURES' educational outreach program is founded on three practical principles: first, farmers need to clearly understand which management practices can cause non point source pollution; second, they must be shown alternative practices that can be adapted to their farming operation to solve the problem; third, farmers need expert advice and assistance in implementing the practices. Much of this information and assistance is available in Central California, but it must be collected and communicated in a user-friendly process that has broad outreach capabilities and has the confidence of the farming community. CURES can greatly facilitate that process through projects described in this proposal.

A parallel situation exists with urban pesticide users and professional pest control applicators. Understanding the problem, learning how to solve the problem, and then receiving assistance in implementing the solution are equally important to correcting urban practices that may contribute to non point source pollution.

With the financial assistance of CALFED, CURES intends to become the "go-to" organization for growers and others to get information, advice and service references for reducing or preventing non point source pollution originating from use of pesticide and fertilizers products in central California agriculture and urban centers.

Task One: Development of demonstration farms to showcase management practices for major crops in each targeted region.

A key component of our proposal is establishing demonstration farms where management practices for protecting water quality for a number of crops and farm layouts can be implemented and adapted to suit Central Valley conditions. These "model farms" will be located throughout the targeted region and will include various crops, including almonds, peaches, prunes, walnuts, alfalfa, sugar beets, and tomatoes and will be set up with the assistance of commodity groups representing the individual crops.

Showcasing the model farms will be accomplished through grower tours scheduled throughout the year. These tours will be organized in conjunction with local Natural Resource Conservation Service District Conservationists, the county Farm Bureau, UCCE Farm Advisors, the county Agricultural Commissioners, commodity groups representing the crops grown, and local irrigation districts. CURES will also develop and distribute educational materials for individual management practices that describe how to adapt and implement the practices under typical local conditions, and whom to contact locally for information.

On selected demonstration farms, CURES proposes to set-up high quality water monitoring stations to evaluate the effectiveness of conventional versus alternative management practices employed on the site. This information will help fine-tune the management practice and its value for reducing non point source pollution.

Task One Deliverables:

- Demonstration farms in key regions.
- Events where farmers see management practices in place.
- Management practice literature usable in other regions of the state.
- Develop accurate monitoring data on selected management practices.

Task Two: Environmental reviews of farming practices for protecting surface water

Another important component of assisting individual growers to protect water quality is development of a "farm environmental review." Key to the success of this effort is utilizing local pesticide and nutrient product dealers and their Pest Control Advisors (PCAs)/Certified Crop Advisors (CCA), who will personally assist growers in performing the reviews on their farms. Typically, farmers make decisions to use pesticide products and nutrients with the help of their PCA or CCA, highly-trained professionals who have a close working relationship with the grower. CURES will develop the farm environmental reviews and also provide training for PCAs/CCAs on how to work through the reviews with growers. A financial incentive will be provided to the crop advisors for each farm review they perform.

Task Two deliverables:

- Development of a self-review program for farming operations to protect water quality.
- Increased farmer awareness of the potential impact of farming practices on fish species and other wildlife habitat.
- PCAs/CCAs' heightened awareness of their responsibility to communicate with farmers about the potential impact of farming practices on fish species and other wildlife habitat.

Task Three: Qualified speakers provide training for growers and PCAs/CCAs at local continuing education (CE) meetings.

To build awareness about the water quality issue among growers and PCAs/CCAs, CURES will work with County Agricultural Commissioners and CAPCA to place trained speakers in continuing education (CE) sessions (growers must have CE credits to obtain a pesticide use permit or maintain a PCA/CCA license). Water quality protection brochures along with other related materials produced by CURES will be given as handouts at the meetings.

Task Three Deliverables:

- Raised level of awareness by growers and PCAs/CCAs about water quality issues.
- Direct training on management practices for reducing non point source pollution.
- Wider adoption of water quality protection management practices on targeted farms.

Task Four: Provide speakers/co-sponsor meetings with farm organizations to build awareness of water quality protection

CURES will also provide qualified speakers for key commodity and farm organization meetings to continue building awareness of the water quality issue. CURES will also organize and co-sponsor 6 water quality meetings per county/year with local farm groups throughout the targeted region. This CURES effort has been ongoing since November 1998; more than 400 growers/PCAs/CCAs have already heard our water quality presentation.

Task Four Deliverables:

- Raised level of grower and industry awareness about the water quality issue.
- Wider adoption of management practices to protect water quality in the targeted region.

Task Five: Qualified speakers provide training for urban pest control operators and landscape professionals at local continuing education (CE) meetings.

To build awareness about the water quality issue among urban pest control operators and landscape professionals, CURES will work with County Agricultural Commissioners, Pest Control Operators of California (PCOC) and Target Specialty Products (trains 2000 professionals per year in seminars organized by the company) to place trained speakers in continuing education (CE) sessions held throughout the year (PCOs must have CE credits to maintain their licenses). Water quality protection guidebooks written for this audience will be developed by CURES and be given as handouts at the meetings.

Task Five Deliverables:

- Raised level of awareness among PCOs and professional landscapers about the water quality issue.
- Direct training on management practices to reduce non point source pollution.
- Wider adoption of practices to protect water quality in urban settings.
- Educational materials for protecting water quality by urban professionals.

Task Six: Communication of project efforts and results

To support the CALFED educational efforts on protecting water quality, CURES proposes to communicate information to targeted audiences through:

- A quarterly newsletter to publicize model farms, calibration clinics, new research results on management practices to protect water quality, and resource information.
- Publicity on the model farms and other CURES activities through the regional farm trade press and county Farm Bureau newspapers.
- Condensed articles and illustrations for use in farm advisor newsletters and county Farm Bureau newspapers.

Task Six Deliverables:

- Promotion of management practices to protect water quality to a regional and statewide audience.
- Broad regional exposure of CALFED and CURES efforts to reduce non point source pollution and protect fish and other wildlife habitat.

Task Seven: Airing Public Service Announcements on Water Quality Protection in Targeted Urban Centers

A number of print and TV water quality PSAs are already written, produced and ready for airing, including PSAs developed by the Sacramento River Watershed Program and the California Department of Pesticide Regulation in its "Home to Ocean" program developed for POTWs. With support from CALFED, CURES intends to distribute these PSAs to the media in the targeted urban centers, including TV, radio, and print. These materials will be directed to garden talk show hosts and gardening columnists. More importantly, CURES will coordinate follow-up calls to the media to encourage widespread use of the materials.

Task Seven Deliverables:

- Raised level of awareness about protecting water quality among urban pesticide users.
- Reduced pesticide loads at urban water treatment plants.
- Improved fish and wildlife habitat as a result of lower pesticide and fertilizer loads.

Task Eight: Reporting To CALFED

Quarterly reports on the progress of implementing this information and model farm demonstration project will be submitted to CALFED. The reports will include requests for payments, narratives and financial reports. We will also submit an annual report.

Task Eight Deliverables:

- Quarterly financial and narrative reports to CALFED.
- Annual reports evaluating overall impact of program on CALFED.

Project Phases and Timetables (attach chart)

Project management

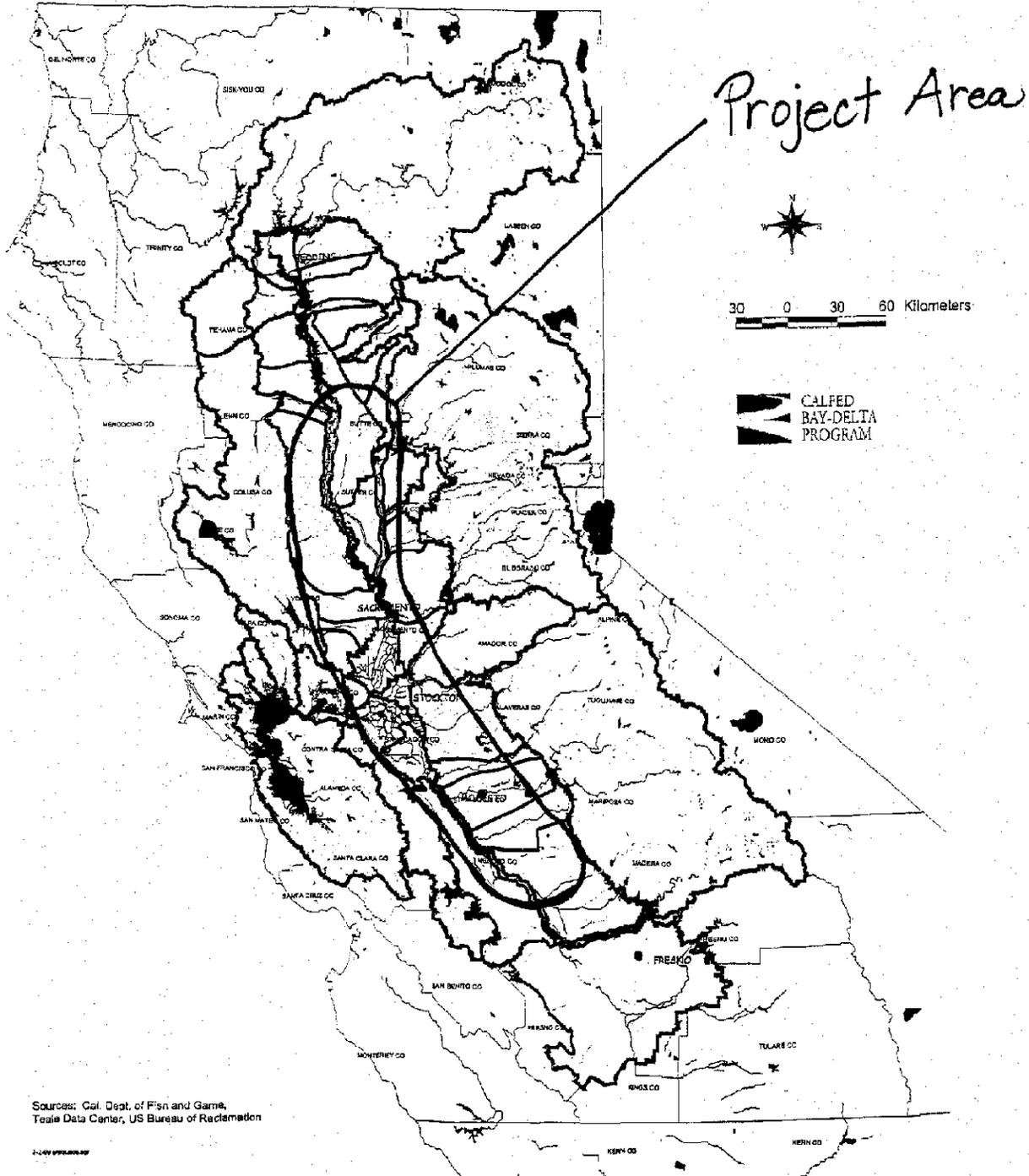
Mr. Klassen will serve, on a contract basis with CURES, as project manager for this project. In that role, he will manage budgets, subcontractors, and scheduling and coordinate activities with collaborators. As project manager, he will interact with all subcontractors and see that adaptive management processes are used to provide continuous improvements in the projects.

Project Priority (in case of only partial funding)

Projects described in Tasks One through Task Seven are listed in order of priority should only partial funding be granted for this proposal.

Geographic Boundaries of the Project

The targeted regions for the proposed efforts include the San Joaquin and Sacramento River watersheds. Counties to be covered include Merced, Stanislaus, San Joaquin, Sacramento, Yolo, Sutter, Butte, and Yuba counties. Targeted urban centers include Sacramento, Modesto, Marysville, and Stockton. (see attached maps)



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Ecological/Biological Benefits

The biological/ecological objective for this CURES proposal is to reduce or eliminate the threat of water quality degradation and adverse effects on fish and other aquatic organisms' habitat from the beneficial use of pesticide and nutrient products used for producing crops and controlling urban pests in the targeted region. This project is needed to alert growers and urban professionals about the practices that can contribute to non point source pollution and identify ways to solve problem situations. The program will promote management practices specific to the major crops in the region and adapted to local circumstances, with the aim of preventing non point source pollution from moving into sensitive areas. By successfully implementing this program, the potential exists to dramatically reduce non point source pollution, allowing stressed waterways to be restored to more pristine habitat for all species.

This project takes a complementary approach to projects currently funded by CALFED, including the CAFF project (CALFED #97-N20) and UC Davis project (#97-C12). In the CAFF project, one goal is to encourage farmers to change fundamental growing practices for almonds and other crops. The CURES approach is to work within existing farming practices but correct key transport components of non point source pollution, ie field runoff from storms or irrigation. While most of the systems promoted in the CAFF project are not proven on a wide scale, many aspects will be important to the CURES effort once they are proven to be effective on a wide scale. Unlike the UC Davis project, which is identifying alternative products and cultural practices to replace Diazinon and chlorpyrifos, the CURES approach is not product specific. Rather it attempts to reduce or eliminate non point source pollution from all nutrients and pesticides, both organic and conventional. CURES intends to include any findings from the CAFF or U.C Davis studies in its proposed communications efforts.

Another goal of the CURES project is to communicate about the water quality issue with the approximately 2500 growers and 300 pest control advisors operating in the region. Over the three-year project, CURES also intends to complete at least 1000 environmental farm site reviews with farmers operating in sensitive areas. Selected farmers will be re-surveyed in 3 years to document the number of changes made to each farming operation, helping to substantiate the effectiveness of this project.

A significant number of farmers can be expected to correct practices that contribute to non point source pollution because of the importance and need to preserve use of nutrients and pesticides for efficient crop production in the region. Pesticide and nutrient products can be credited with enabling farmers to produce an abundant harvest of fruits, vegetables, nuts, and grains in the Central Valley of California. Many of the same products are used to control weeds and pests in parks, commercial landscapes, buildings and homes.

The primary stressors targeted for this effort include crop nutrients, diazinon, chlorpyrifos, and other pesticides detected in tributaries leading to the Bay/Delta. Reducing or eliminating these stressors from this ecosystem is important for the recovery of the habitat supporting the Delta smelt, Chinook salmon, and other threatened and endangered species.

A primary benefit of a successful CURES program is the potential to significantly reduce non point source pollution from use of pesticide and nutrient products on farms and in urban centers. This can improve habitat for aquatic organisms and other wildlife. Another primary benefit is preserving the use of necessary and valuable pesticide and fertilizer products in the Central Valley. The active water monitoring component of the program will prove beneficial by providing scientific information on management practices for protecting

water quality, which is important for future mitigation measures in agriculture and urban settings.

A successful CURES project also benefits third parties. Public water treatment facilities will have improved water quality at intakes. Regulatory agencies will find improved compliance with water quality and pesticide management objectives. Farmers and pest control companies operating in sensitive areas will learn how to improve control over pesticide and nutrient products used in their operations and thereby preserve the use of valuable pesticide tools. Urban users will also learn to apply and dispose of products used in homes and gardens more wisely. The public will benefit by having a healthier delta ecosystem. This will be accomplished in an efficient and cost effective manner that will release limited available public funding for other important environmental goals.

Several important scientific questions regarding management practices for protecting water quality will also be answered by this project. Management practices for protecting water quality have been used by farmers in the Midwestern states for many years. However, very few have been closely monitored for effectiveness for California crops, growing conditions and farming practices. Although similar farming conditions in the Midwest lead many to believe these practices should work as well in California, there is limited sound scientific data under local conditions. This project will help correct that situation by substantiating the effectiveness of practices for numerous crops and farming situations. Through use of adaptive management practices, the most effective practices will be fine tuned to work effectively under local crop conditions.

Once growers adopt practices to protect water quality, a number of factors will motivate them to integrate the changes permanently in their farming operation. These motivations include the desire to protect the environment, need to preserve use of nutrients and pesticide products, and the potential for regulatory action. This combination of motivations will support widespread adoption of these practices, making them a durable part of farming in the region. The effort can continue to sustain itself because water quality protection will become a permanent subject in continuing education curricula directed to farmers and PCAs/CCAs in the region, keeping the issue top-of-mind.

Linkages

This proposal is intended to seek CALFED funding by the farm and supplier industry as a means to identify, communicate and promote management practice changes to correct non point source pollution. CALFED is currently funding other agriculture and urban related projects where pesticide/nutrient uses and non point source pollution are addressed. The Community Alliance with Family Farmers/Lighthouse Farm Network project (CALFED #97-N20) includes efforts to promote a transition from conventional agriculture to Biologically Integrated Orchard Systems (BIOS). A key part of BIOS is using seeded cover crops in orchards. This practice holds potential for preventing off-site movement of pesticides and fertilizers. Information gained from the BIOS work will be included in programs described in this proposal, i.e. demonstration farm sites and communications to grower audiences. A similar approach is being taken by the University of California - Davis project (97-C12), which is also examining alternatives to conventional pest control practices. The CURES effort will compliment that effort by expanding the number of crops and farmers where management practices refined in the UC Davis study can be communicated and demonstrated. Findings from all these efforts will be included in communications efforts outlined in this proposal.

The objectives and targets of "The Ecosystem Restoration Projects" that this program addresses includes: (a) Protect existing and restore and increase the quality of freshwater habitat as an integral component of restoring large expanses of all major habitat types in the Central Valley and its rivers (Summary of Strategic Goals and Objectives, Goal 4, Habitats, Habitat Subobjective, pg 30) (b) Improve and maintain water and sediment quality to eliminate, to the extent possible, toxic impacts on organisms in the system, including humans; and Reduce the concentrations and loadings of contaminants to levels that do not cause adverse effects in all aquatic environments in the Bay-Delta watershed. (Summary of Strategic Goals and Objectives, Aquatic Toxicity, Goal 6, pg 31) (c) Develop regional plans to reduce effects of non point source contaminants; and reduce human activities that adversely affect wildlife behavior or cause habitat destruction, decrease reproductive success, and contribute to the decline of important species. (Summary of Strategic Goals and Objectives, Stressor Reduction Objectives, table 5-1)

The program also address the Watershed Program Goals and Objectives, including (a) To facilitate and improve coordination, collaboration, and assistance among government agencies, other organizations, and local watershed groups (Revised Watershed Program Plan, Primary Objectives, pg 1-7) (b) Support education and outreach (ibid) (c) Implement a strategy that will support the long-term sustainability of local watershed activities (Revised Watershed Program Plan, Primary Objectives, pg 1-8)

This project will support CALFED and its overall and short-term objectives of putting in place a plan to reduce or eliminate non point source pollution caused by agriculture or urban uses of pesticides and fertilizer. This effort will help restore the ecological health and improve water quality for beneficial uses of the Bay-Delta system.

System-Wide Ecosystem Benefits

This program can provide an important benefit to the regional ecosystem by reducing or eliminating the potential adverse impacts to threatened fish populations and aquatic life habitat from offsite transport of pesticide and nutrient products as non point source pollution. This is particularly important to the recovery of at-risk species dependent on the Delta and other connected watersheds. Other benefits include improving and maintaining water and sediment quality and eliminating, to the extent possible, toxic impacts to organisms in the system.

This program can also produce synergies with other water quality protection programs funded by CALFED, the California Department of Pesticide Regulation, and other private and government agencies. Management practices and other information developed through these programs can be readily included in CURES communications efforts, demonstration farm sites, and other programs.

Compatibility with Non Ecosystem Objectives

The CURES proposal as outlined supports and compliments the current CALFED non-ecosystem objectives for watershed management and protecting water quality.

Technical Feasibility and Timing

As currently proposed, this project will not require use of environmental compliance documents. All demonstration farms will be arranged through permission and cooperation with the individual private landowners. No change in zoning regulations or county planning ordinances should be required for this project.

CURES does not foresee any barriers to establishing key components of this proposal, including organizing and setting up demonstration farms or developing farm site environmental reviews. Project collaborators, in particular the pesticide/fertilizer dealers, have agreed to facilitate identifying as priority growers for the reviews those with property near rivers, waterways and other sensitive areas.

The basic management practices chosen for the demonstration farms are already being studied and installed in conjunction with work performed by the Natural Resource Conservation Districts in several Central California counties, including those targeted in this proposal. Each installation planned is technically feasible from a structural and technical standpoint and will be installed according to the specific conditions on the farm site. These installations could include some or all of the following aspects:

- Grassy filter strips
- Grassy row centers
- Seasonal native vegetation in row middles
- Grassed on-farm waterways
- Irrigation tailwater recirculation systems
- Shelterbelts/field windbreaks
- Containment facilities for mixing and loading crop sprayers
- Irrigation management to prevent field runoff

Timing of the installations will depend on the cropping system used on each farm. However, for most demonstration farms, installations will begin by August 1999 and be completed in time for farm tours scheduled for the beginning of winter 1999-2000. Water monitoring on selected sites will commence once an installation is complete.

The environmental review will be based on a document prepared by the California Tree Fruit Agreement entitled "Profile of Farm, Orchard and Packinghouse Practices: A Self-Audit of Operating Procedures." The Water Quality Steering Committee formed by CURES will use this document as a starting point and make appropriate adjustments to fit the environmental protection goals of this project. This development process will be completed in October 1999, with grower environmental reviews beginning immediately after. PCAs/CCAs will perform the reviews with growers on a fee basis, repeating the review three years later to track changes in management practices. Farm sites will be selected on a priority basis, beginning with operations near waterways and water bodies. Farmers will be guaranteed strict confidentiality for any information recorded in the reviews.

Monitoring and Data Collection Methodology

Biological/Ecological Objectives

The CURES biological/ecological objective is to eliminate or reduce the threat of water quality degradation and adverse effects on fish, and the habitat of fish and other species from the beneficial use of pesticide and nutrient products. Results from water quality monitoring will determine which management practices reduce the off-farm migration of pesticides and nutrients, and grower surveys will assess the effectiveness of outreach and education efforts in promoting these adaptive management practices.

Monitoring Parameters and Data Collection Approach

Upon project approval, CURES will announce an RFP to seek a private, certified laboratory to perform water quality sampling. The California Department of Pesticide Regulation has agreed to provide oversight for lab selection and review protocols for sampling.

Five model farms will be selected for the demonstration project. At each farm, three water monitoring stations will be identified: one station each for ; incoming irrigation water, drain water from a field managed using traditional practices, drain water from a comparable field managed using alternative practices. Approximately 20 sampling events will occur throughout the year and, as applicable, a water sample will be collected from each station during each event. The sampling will be biased toward periods irrigation periods and wet weather events. The samples will be evaluated by a California-certified laboratories for quantitative toxicity and chemical analyses.

The toxicity of the water samples to the fathead minnow and *Ceriodaphnia dubia* will be measured following standard US EPA methods. A toxic sample is defined as one in which mortality in a sample is significantly higher than a laboratory control sample. To establish the number of toxic units present in the sample, dilution tests will be performed. Determination of the number of toxic units per sample permits quantitative comparison between alternative and conventional practices. The water samples will also be analyzed for physical and chemical constituents associated with the management practices being studied, including soil amendments, fertilizers, and pest control chemicals. The concentrations of analytes in samples from each station will be compared to one another. Quality assurance and control measures will include reference toxicant testing, and blank, spike, and duplicate analyses.

To monitor success of the education and outreach effort, farmers will be surveyed to determine whether they have been informed about the alternative practices and most importantly whether they have adopted the practices.

Data Evaluation Approach

The contractor responsible for the collection of the samples will prepare quarterly reports summarizing the results of the sampling and analyses. On an annual basis, a steering committee made up of collaborators will review the monitoring and survey data to identify the most practical and effective management practices and assist in refining strategies to promote their widespread adoption.

The effectiveness of communication and outreach efforts will be evaluated with results from year three, follow-up environmental reviews performed by crop consultants. This information will be combined with results from comprehensive surveys performed at year 3 of the program to determine how widely the alternative practices are adopted, the acreage affected by the practices, barriers to wider adoption, and the specific waterways draining these acreages. CURES will also survey farmers who attend demonstration farms tours to gauge adoption of practices on a local scale. This information, coupled with water quality monitoring, will provide quantitative measures of efficacy.

Table 2 Monitoring and Data Collection Information

Biological/Ecological Objectives

Determine which specific management practices show the best promise for reducing or eliminating offsite movement of pesticides and nutrients and the rate of their adoption among growers in the targeted region.

| Hypothesis/Question to be evaluated | Monitoring Parameters and data collection approach | Data Evaluation Approach | Comments/Data Priority |
|--|---|--|------------------------|
| Alternative management practices reduce the offsite movement of pesticide and nutrients. | Collect and analyze drainwater samples from conventional and alternative management approaches. | Compare water quality results from fields with alternative practices to fields with conventional practices. | Priority 1 |
| Informed growers will select proven alternative management practices. | Farmer surveys in targeted counties, performed at field tours, meetings. | To quantify if farmers have heard about management practices to protect water quality; to determine how many farmers have implemented the practices. | Priority 2 |

Local Involvement

A key component of this project is the diverse coalition of collaborators who have made a commitment to work with CURES and provide their expertise as well as access to their constituents. These collaborators provide strong local credibility and access to agricultural pesticide end-users, as well as excellent technical knowledge. For instance, each county Farm Bureau in the targeted area has agreed to facilitate selection of demonstration farms and assist in promoting field tours. Each county also has a local UCCE Farm Advisor and Natural Resource Conservation Service district conservationist who will be asked to play a key role in supporting site-specific application of improved pesticide and nutrient product management practices. Each has extensive experience in implementing farm plans to protect the habitat of fish and other wildlife. Local pesticide and nutrient dealers and their PCAs/CCAs in each region also provide access to growers and will play a pivotal role in encouraging adoption of management practices to protect water quality. Irrigation districts in the key watersheds have agreed to facilitate location of demonstration farms and promotion of events to member growers. Neighboring landowners, local watershed groups and local governments will be notified about the demonstration farms by letter and in person after finalizing locations with the landowners and appropriate commodity groups.

CURES will also work in cooperation with the California Department of Pesticide Regulation and California Department of Food and Agriculture in the development and site adaptation of management practices to protect water quality. CURES supports their effort in identifying and avoiding or minimizing potential adverse impacts to water quality and to particular species of concern. It is CURES position that these agencies need to be supported in their jurisdiction over the necessary use of pesticide and fertilizer products and on-farm environmental issues.

For urban activities, CURES has gained support from key organizations and companies who represent the urban pest control operators, professional landscape maintenance companies, and product distributors. These groups have committed to facilitating CURES in its water quality protection education effort.

(Note: Several County Farm Bureaus and Resource Conservation Districts in the targeted region were unable to sign on to this project due to lengthy approval processes with management boards who were unable to respond by April 16. However, their inclusion as collaborators is continuing to be pursued and is expected to be approved.)

Public Outreach Plan

CURES will intensively promote its demonstration farm project and educational meetings with the grower/Pest Control Advisor/Pest Control Operator/landscape professional audiences throughout the target region. This effort will initially focus on the regional farm/pest control industry trade press and county Farm Bureau newspapers. Local and regional groups interested in wildlife protection will also be notified about the CURES effort. In years 2 and 3, efforts will expand to the mainstream press to publicize agriculture's effort to protect the water quality and aquatic habitat of the Sacramento/San Joaquin estuary.

Third Party Impacts

Fisheries: improved aquatic life habitat; Agriculture: improved control of management tools; preserve use of valuable pesticide tools; Water Treatment Facilities: Improved water quality at intakes; compliance with discharge permit requirements; Regulatory agencies: improved compliance with water quality objectives/management programs; Public: healthier Delta ecosystem.



April 15, 1999

Butte County Board of Supervisors
25 County Center Drive
Oroville, CA 95965

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

We also may hold farmer education meetings in your county, with the cooperation of the local Farm Bureau office, where surface water quality protection issues and practices will be discussed.

We anticipate no negative impact on county property or its citizens and will abide by all local ordinances in performing these projects.

If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager

P.O. Box 348711 · Sacramento, CA 95834-8711 · 916-646-9951 · Fax 916-585-0113



April 15, 1999

Butte County Planning Commission
7 County Center Drive
Oroville, CA 95965

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager

P.O. Box 348711 - Sacramento, CA 95834-8711 - 916-646-9951 - Fax 916-565-0113



April 15, 1999

Colusa County Board of Supervisors
546 Jay Street
Colusa, CA 95932

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Colusa County Planning Commission
220 - 12th Street
Colusa, CA 95932

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Merced County Board of Supervisors
2222 M Street
Merced, CA 95340

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager

P.O. Box 348711 · Sacramento, CA 95834-8711 · 916-646-9951 · Fax 916-565-0113



April 15, 1999

Merced County Planning Commission
Planing Department
2222 M Street
Merced, CA 95340

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Sacramento County Board of Supervisors
700 II Street, Suite 2450
Sacramento CA 95814

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Sacramento County Planning Commission
700 H Street, Suite 2450
Sacramento CA 95814

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

San Joaquin County Board of Supervisors
222 E. Weber Avenue, Suite 701
Stockton, CA 95202

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

San Joaquin County Planning Commission
1810 E. Hazelton Avenue
Stockton, CA 95205

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Stanislaus County Board of Supervisors
1100 H Street, 2nd Floor
Modesto, CA 95354

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Stanislaus County Planning Commission
1100 H Street, 2nd Floor
Modesto, CA 95205

To Whom It May Concern:

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Sutter County Board of Supervisors
1160 Civic Center Boulevard, Suite A
Yuba City, CA 95993

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Sutter County Planning Commission
1160 Civic Center Boulevard, Suite E
Yuba City, CA 95993

To Whom It May Concern:

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager

P.O. Box 348711 · Sacramento, CA 95834-8711 · 916-646-9951 · Fax 916-565-0113



April 15, 1999

Yolo County Board of Supervisors
625 Court Street, Suite 204
Woodland, CA 95695

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Yolo County Planning Commission
292 West Beamer Street
Woodland, CA 95695

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Yuba County Board of Supervisors
215 - 5th Street
Marysville, CA 95901

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager



April 15, 1999

Yuba County Planning Commission
938 - 14th Street
Marysville, CA 95901

To Whom It May Concern:

This letter is to inform you that the Coalition For Urban/Rural Environmental Stewardship (CURES) has submitted a proposal to CALFED, a state and federal agency, to request funding for projects that will be organized and implemented within your county. These projects may include demonstration farms on private property (with permission of the owner) that will show farm management practices designed to protect surface water quality. Farmers and public tours of those farms will be scheduled periodically over the next three years.

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If you have any questions about our CALFED proposal, please contact me at the address below.

Sincerely,

Parry Klassen
Project Manager

P.O. Box 348711 · Sacramento, CA 95834-8711 · 916-646-9951 · Fax 916-565-0113

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I-018173

Cost

See attached budget

Cost-sharing

CURES is currently organizing private fundraising activities to seek support for the projects described in this proposal. Currently, no sources have been finalized. However, any private funds collected will be used to directly off-set costs need to implement the projects described in this proposal.

| | | | | |
|------------------------------|-----------|--|--|--|
| Total Project By Year | | | | |
| | | | | |
| Year 1 1999-2000 | | | | |
| Task 1 | 609,700 | | | |
| Task 2 | 121,900 | | | |
| Task 3 | 49,900 | | | |
| Task 4 | 77,700 | | | |
| Task 5 | 88,400 | | | |
| Task 6 | 72,000 | | | |
| Task 7 | 135,200 | | | |
| Task 8 | 23,800 | | | |
| Total year 1 | 1,178,600 | | | |
| Year 2 2000-2001 | | | | |
| Task 1 | 549,700 | | | |
| Task 3 | 49,900 | | | |
| Task 4 | 77,700 | | | |
| Task 5 | 68,000 | | | |
| Task 6 | 72,000 | | | |
| Task 7 | 135,200 | | | |
| Task 8 | 23,800 | | | |
| Total Year 2 | 976,300 | | | |
| Year 3 2001-2002 | | | | |
| Task 1 | 609,700 | | | |
| Task 2 | 121,900 | | | |
| Task 3 | 49,900 | | | |
| Task 4 | 77,700 | | | |
| Task 5 | 88,400 | | | |
| Task 6 | 72,000 | | | |
| Task 7 | 135,200 | | | |
| Task 8 | 23,800 | | | |
| Total year 3 | 1,178,600 | | | |
| | | | | |
| Total Project | 3,333,500 | | | |

| Year 1 Budget, page 1 | | | | | | |
|--|-----------------------|--------------------------------|----------------------|---------------------------|----------------------------------|----------------------------|
| July 1999-July 2000 | | | | | | |
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 1: Model Farms – Year One | | | | | | |
| Project manager | 520 hrs/yr | | 41,600 | | | |
| Assistant proj. mgr. – North Valley | 320 hrs/yr | | 12,800 | | | |
| Assistant proj. mgr. – South Valley | 320 hrs/yr | | 12,800 | | | |
| Model farm compensation 1500/farm x 5 farms | | | 7500 | | | |
| Water monitoring plan | | | 7500 | | | |
| Water Sampling x 5 farms | | | 200,000/yr | | | |
| Sample analysis | | | 260,000/yr | | | |
| Quarterly reports/yr | | | 7500 | | | |
| Management practice brochures: 1/farm: 5 total | | | | 60,000 | | |
| Program total | | | | | | 609,700 |
| Task 2: Environmental Reviews | | | | | | |
| Develop/Print 1000 reviews | 90 | | | 12,500 | | |
| PCA/CCA Audit training, materials | 45 hrs | | | 9400 | | |
| PCA/CCA Review fees 1000 reviews at @ \$100 | | | 100,000 | | | |
| Program total | | | | | | 121,900 |
| Task 3 Speaker Training/ placement – ConEd Meetings | | | | | | |
| Speaker placement with ConEd/farm org mtgs. | 240 hrs/yr | | 19,200 | | | |
| Materials/handouts (reprint 3 guidebooks) | | | 4000 | | | |
| Slide show production/presentation materials | 52 | | 8700 | | | |
| Speaker presentation fee \$75/mtg – 240 mtgs. | | | 18,000 | | | |
| Program Total | | | | | | 49,900 |

| Year 1 Budget: page 2 | | | | | | |
|---|-----------------------|--------------------------------|----------------------|---------------------------|-----------------------------------|----------------------------|
| July 1999-July 2000 | | | | | | |
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen. Admin & Fee) | Total by Budget Area |
| Task 4 Speaker Training/Placement Grower mtgs | | | | | | |
| Speaker placement with farm org mtgs | 240 hrs/yr | | 19,200 | | | |
| Speaker training 3 sites | 48 hrs | | 3800 | | | |
| Materials/handouts (reprint 3 guidebooks: 3000 ea.) | | | 4000 | | | |
| Slide show production/presentation materials | 52 | | 8700 | | | |
| Co-sponsor 4 events per 9 counties/yr @\$750 | | | 27,000 | | | |
| Grower surveys | | | | 15,000 | | |
| Program Total | | | | | | 77,700 |
| Task 5 Speaker Training/Placement Urban prof. Mtgs. | | | | | | |
| Speaker placement with urban prof. Mtgs | 240 /yr | | 19,200 | | | |
| Speaker training 3 sites | 48 | | 3800 | | | |
| Develop Urban Guidebook /handouts: 3 brochures | 90 | | 7200 | | | |
| BMP Guidebook Design/Production/Print 3 brochures; 3000 quan ea | | | | 27,000 | | |
| Slide show production/presentation materials | 52 | | 8700 | | | |
| Co-sponsor 6 events per 5 urban centers /yr @\$750 | | | 22,500 | | | |
| Project Total | | | | | | 88,400 |

| <u>Year 1 Budget, page 3</u> | | | | | | |
|---|--------------------|--------------------------|-------------------|------------------------|----------------------------|----------------------|
| <u>July 1999-July 2000</u> | | | | | | |
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 6 Communications efforts | | | | | | |
| 3x/yr newsletter, 3000 circ; mgmt/writing | 135 hrs/yr | | 10,800 | | | |
| Newsletter Production/printing | | | | 38,400 | | |
| Model farm tour set-up/manage/publicity: 5 tours | 140 hrs | | 11,200 | | | |
| Newsletter/local farm paper water issue articles: 2 per county; 18 articles | 145 hrs | | 11,600 | | | |
| | | | | | | 72,000 |
| Task 7 Urban PSA materials, PSA broadcast | | | | | | |
| Research/garden media calls; 5 target cities; garden | 150/yr | | 12,000 | | | |
| PSA Media kit development/materials for 300 kits | 25 | | | 3200 | | |
| Media buys in: | | | | | | |
| Sacramento | | | | 50,000 | | |
| Stockton | | | | 35,000 | | |
| Modesto | | | | 35,000 | | |
| Project Total | | | | | | 135,200 |
| Task 8 Reporting to CALFED | | | | | | |
| Quarterly Reports | 80 hr/yr | | 6400 | | | |
| CPA Annual Audit | 60/yr | | 7800 | | | |
| Bookkeeping | 240/yr | | 9600 | | | |
| Project Total | | | | | | 23,800 |
| | | | | | | |
| July 1999-July-2000 Annual Total | | | | | | \$1,178,600 |

| Year 2 Budget: page 1 | | | | | | |
|--|--------------------|--------------------------|-------------------|------------------------|----------------------------|----------------------|
| August 2000-July 2001 | | | | | | |
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 1: Model Farms – Year One | | | | | | |
| Project manager | 520 hrs/yr | | 41,600 | | | |
| Assistant proj mgr -- North Valley | 320 hrs/yr | | 12,800 | | | |
| Assistant proj mgr – South Valley | 320 hrs/yr | | 12,800 | | | |
| Model farm compensation 1500/farm x 5 farms | | | 7500 | | | |
| Water monitoring plan | | | 7500 | | | |
| Water sampling x 5 farms | | | 200,000/yr | | | |
| Sample analysis | | | 260,000/yr | | | |
| Quarterly reports/yr | | | 7500 | | | |
| Program total | | | | | | 549,700 |
| Task 3 Speaker Training/ placement – ConEd Meetings | | | | | | |
| Speaker placement with ConEd/farm org mtgs | 240 hrs/yr | | 19,200 | | | |
| Materials/handouts (reprint 3 guidebooks) | | | 4000 | | | |
| Slide show production/presentation materials | 52 | | 8700 | | | |
| Speaker presentation fee \$75/mtg – 240 mtgs | | | 18,000 | | | |
| Program Total | | | | | | 49,900 |
| Task 4 Speaker Training/Placement Grower mtgs | | | | | | |
| Speaker placement with farm org mtgs | 240 hrs/yr | | 19,200 | | | |
| Speaker training 3 sites | 48 hrs | | 3800 | | | |
| Materials/handouts (repr. 3 gdbks: 3000 ea.) | | | 4000 | | | |
| Slide show prod/present materials | 52 | | 8700 | | | |
| Co-sponsor 4 events per county/yr @\$750 | | | 27,000 | | | |
| Grower surveys | | | | 15,000 | | |
| Program Total | | | | | | 77,700 |

| Year 2 Budget; page 2 August 2000-July 2001 | | | | | | |
|---|-----------------------|--------------------------------|----------------------|---------------------------|----------------------------------|----------------------------|
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 5: Speaker Training/Placement Urban prof mtgs | | | | | | |
| Speaker placement | 240/yr | | 19,200 | | | |
| Speaker training 3 sites | 48 | | 3800 | | | |
| Slide show production/presentation materials | 52 | | 22,500 | | | |
| Co-sponsor 6 events in 5 urban center /yr @\$750 | | | | 22,500 | | |
| Project Total | | | | | | 68,000 |
| Task 6 Communications efforts | | | | | | |
| 3x/yr newsletter, 3000 circ; mgmt/writing | 135 hrs/yr | | 10,800 | | | |
| Newsletter Production printing (adv. agency) | | | | 38,400 | | |
| Model farm tour set- up/manage/publicity: 5 tours | 140 hrs | | 11,200 | | | |
| Newsletter/local farm paper water issue articles: 2 per county; 18 articles | 145 hrs | | 11,600 | | | |
| | | | | | | 72,000 |
| Task 7 Urban PSA materials, PSA broadcast | | | | | | |
| Research/garden media calls; 5 target cities; garden | 150/yr | | 12,000 | | | |
| PSA Media kit development/materials for 300 kits | 25 | | | 3200 | | |
| Media buys in: | | | | | | |
| Sacramento | | | | 50,000 | | |
| Stockton | | | | 35,000 | | |
| Modesto | | | | 35,000 | | |
| Project Total | | | | | | 135,200 |

| Year 2 Budget, page 3 August 2000-July 2001 | | | | | | |
|---|-----------------------|--------------------------------|----------------------|---------------------------|-----------------------------------|----------------------------|
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | Off Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 8 Reporting to CALFED | | | | | | |
| Quarterly Reports | 80 hr/yr | | 6400 | | | |
| CPA Annual Audit | 60/yr | | 7800 | | | |
| Bookkeeping | 240/yr | | 9600 | | | |
| Project Total | | | | | | 23,800 |
| August 2000 - July 2001 Annual Total, All Projects | | | | | | \$976,300 |

| Year 3 Budget: page 1 August 2001- July 2002 | | | | | | |
|--|-----------------------|--------------------------------|----------------------|---------------------------|----------------------------------|----------------------------|
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 1: Model Farms -- Year One | | | | | | |
| Project manager | 520 hrs/yr | | 41,600 | | | |
| Assistant proj mgr -- North Valley | 320 hrs/yr | | 12,800 | | | |
| Assistant proj mgr -- South Valley | 320 hrs/yr | | 12,800 | | | |
| Model farm compensation 1500/farm x 5 farms | | | 7500 | | | |
| Water monitoring plan | | | 7500 | | | |
| Water sampling x 5 farms | | | 200,000/yr | | | |
| Sample analysis | | | 260,000/yr | | | |
| Quarterly reports/yr | | | 7500 | | | |
| Management practice brochures: 1/farm: 5 total | | | | 60,000 | | |
| Program total | | | | | | 609,700 |
| Task 2: Environmental Reviews | | | | | | |
| Develop/Print 1000 reviews | 90 | | | 12,500 | | |
| PCA/CCA Audit training, materials | 45 | | | 9400 | | |
| PCA/CCA Review fees 1000 reviews at @ \$100 | | | 100,000 | | | |
| Program total | | | | | | 121,900 |
| Task 3: Speaker Training/ placement -- ConEd Meetings | | | | | | |
| Speaker placement with ConEd/farm org mtgs | 240 hrs/yr | | 19,200 | | | |
| Materials/handouts (reprint 3 guidebooks) | | | 4000 | | | |
| Slide show production/presentation materials | 52 | | 8700 | | | |
| Speaker presentation fee \$75/mtg -- 240 mtgs | | | 18,000 | | | |
| Program Total | | | | | | 49,900 |

| Year 3 Budget; page 2 | | | | | | |
|---|-----------------------|--------------------------------|----------------------|---------------------------|----------------------------------|----------------------------|
| August 2001- July 2002 | | | | | | |
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 4 Speaker Training/Placement Grower mtgs | | | | | | |
| Speaker placement with farm org mtgs | 240 hrs/yr | | 19,200 | | | |
| Speaker training 3 sites | 48 hrs | | 3800 | | | |
| Materials/handouts (reprint 3 guidebooks: 3000 ea.) | | | 4000 | | | |
| Slide show production/presentation materials | 52 | | 8700 | | | |
| Co-sponsor 4 events per county/yr @\$750 | | | 27,000 | | | |
| Grower surveys | | | | 15,000 | | |
| Program Total | | | | | | 77,700 |
| Task 5 Speaker Training/Placement Urban prof. Mtgs | | | | | | |
| Speaker placement with urban prof. Mtgs | 240 hrs/yr | | 19,200 | | | |
| Speaker training 3 sites | 48 | | 3800 | | | |
| Develop Urban Materials/handouts: 3 BMP brochures | 90 | | 7200 | | | |
| BMP Guidebook, Agency Design/Production/Print 3 brochures; 3000 quan ea | | | | 27,000 | | |
| Slide show production/presentation materials | 52 | | 8700 | | | |
| Co-sponsor 6 events per urban center /yr @\$750 | | | 22,500 | | | |
| Project Total | | | | | | 88,400 |

| Year 3 Budget: page 3 | | | | | | |
|---|-----------------------|--------------------------------|----------------------|---------------------------|----------------------------------|----------------------------|
| August 2001- July 2002 | | | | | | |
| | Direct Labor Hours | Direct Salary & Benefits | Service Contracts | Materials & Acq. Costs | OH Labor (Gen Admin & Fee) | Total by Budget Area |
| Task 6 Communications efforts | | | | | | |
| 3x/yr newsletter, 3000 circ; mgmt/writing | 135 hrs/yr | | 10,800 | | | |
| Newsletter Production/printing | | | | 38,400 | | |
| Model farm tour set-up/manage/publicity: 5 tours | 140 hrs | | 11,200 | | | |
| Newsletter/local farm paper water issue articles: 2 per county; 18 articles | 145 hrs | | 11,600 | | | |
| | | | | | | 72,000 |
| Task 7 Urban PSA materials, PSA broadcast | | | | | | |
| Research/garden media calls; 5 target cities; garden | 150 hrs/yr | | 12,000 | | | |
| PSA Media kit development/materials for 300 kits | 25 hrs | | | 3200 | | |
| Media buys in: | | | | | | |
| Sacramento | | | | 50,000 | | |
| Stockton | | | | 35,000 | | |
| Modesto | | | | 35,000 | | |
| Project Total | | | | | | 135,200 |
| Task 8 Reporting to CALFED | | | | | | |
| Quarterly Reports | 80 hr/yr | | 6400 | | | |
| CPA Annual Audit | 60/yr | | 7800 | | | |
| Bookkeeping | 240/yr | | 9600 | | | |
| Project Total | | | | | | 23,800 |
| August 2001- July-2002 Annual Total, All Projects | | | | | | \$1,178,600 |

| Project Quarterly Budget | | | | | | |
|---------------------------------|---------------------------|---------------------------|---------------------------|----------------------------|---------------------------|----------------------------|
| | Qtly budget Oct-Dec 91 | Qtly budget Jan-Mar 00 | Qtly budget Apr-Jun 00 | Qtly budget Jul-Sept 00 | Qtly budget Oct-Dec 00 | Qtly budget Jan -Mar 01 |
| Task 1 | 203,333 | 203,333 | 203,333 | 137,425 | 137,425 | 137,425 |
| Task 2 | 60,950 | 60,950 | | | | |
| Task 3 | 24,950 | 24,950 | | 24,950 | 24,950 | |
| Task 4 | 38,850 | 38,850 | | 38,850 | 38,850 | |
| Task 5 | 44,200 | 44,200 | | 34,000 | 34,000 | |
| Task 6 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 |
| Task 7 | 45,066 | 45,066 | 45,066 | | 45,066 | 45,066 |
| Task 8 | 7,933 | 7,933 | 5,950 | 5,950 | 5,950 | 5,950 |

| | Qtly budget Apr-Jun 01 | Qtly budget July-Sept 01 | Qtly budget Oct-Dec 01 | Qtly budget Jan -Mar 02 | Qtly budget Apr-Jun 02 |
|--------|---------------------------|-----------------------------|---------------------------|----------------------------|---------------------------|
| Task 1 | 137,425 | 152,425 | 152,425 | 152,425 | 152,425 |
| Task 2 | | 60,950 | 60,950 | | |
| Task 3 | | 24,950 | 24,950 | | |
| Task 4 | | 38,850 | 38,850 | | |
| Task 5 | | 44,200 | 44,200 | | |
| Task 6 | | 24,000 | 24,000 | 24,000 | |
| Task 7 | 45,066 | | 45,066 | 45,066 | 45,066 |
| Task 8 | 5,950 | 5,950 | 5,950 | 5,950 | 5,950 |

Applicant Qualifications

CURES is the primary contractor for this proposal and will take responsibility for performance, reporting to CALFED, and oversight of budgets. An organizational chart is attached showing CURES' structure.

CURES is an organization formed to promote stewardship of pesticides to various audiences, including farmers and urban citizens. The non-profit organization was founded in 1997 to support educational efforts for agricultural and urban communities focusing on the proper and judicious use of pest control products. Central to this goal is developing and implementing projects that advance stewardship practices when storing, handling or applying these products.

Since late 1998, CURES has undertaken an intensive program to inform growers in the Central Valley about potential non point source pollution from pesticide and nutrient products while promoting use of management practices with the potential to correct the problem. CURES' greatest strength is its support by both the suppliers of pesticides and nutrient products, who have the most direct, routine contact with farmers, and the various farm and commodity organizations.

CURES is capable of and has the expertise to manage the tasks outlined in this proposal. Other projects currently underway include promoting and distributing materials on agricultural container recycling; promotion of best management practices (BMPs) for orchard and ground sprayers and proper mixing and loading techniques for protection of water quality; developing and distributing ground application stewardship training presentation modules; organizing urban/rural IPM educational tours, among other projects.

In this project, CURES will rely on the expertise of our collaborators (listed on the title page), who will serve on our technical advisory board and also advise the CURES project manager on every aspect of this project, especially in efforts targeted to the local farm community. The advisory board is a broad-based coalition representing stewardship interests of agricultural, environmental, crop protection and water associations, as well as government agencies, academia and public interest groups. Local pesticide and nutrient dealers and their PCAs/CCAs in each region will also play a pivotal role in the outreach efforts described in this proposal.

Project Managers

Parry Klassen: Project Manager, Communications Consultant

Mr. Klassen is a communications consultant, agricultural writer, and fruit grower from Clovis, CA and is an ideal professional to lead and organize the projects described in this proposal. Over the past 20 years, Mr. Klassen has held a number of positions where he has managed agriculture communications project activities. Those activities include being Director of Public Relations for an agriculture advertising/public relations firm with clients in irrigation, fertilizer, crop protection products, and trade organizations; a Group Editor for magazines written for the national and international pesticide industry (Farm Chemicals/Farm Chemicals International), the fruit and vegetable industry (Americian Fruit Grower, American Vegetable grower), and a writer/reporter for several state publications (California Farmer magazine and Ag Alert newspaper), among others. Mr. Klassen also has extensive experience in media relations with the farm trade and mainstream press, including the Los Angeles Times, San Francisco Chronicle, and Fresno/Modesto Bee. He has also helped to organize local groups to develop communications materials on various issues, including the proper use of pesticides in urban settings. He also has organized and led numerous farm tours to operations in California

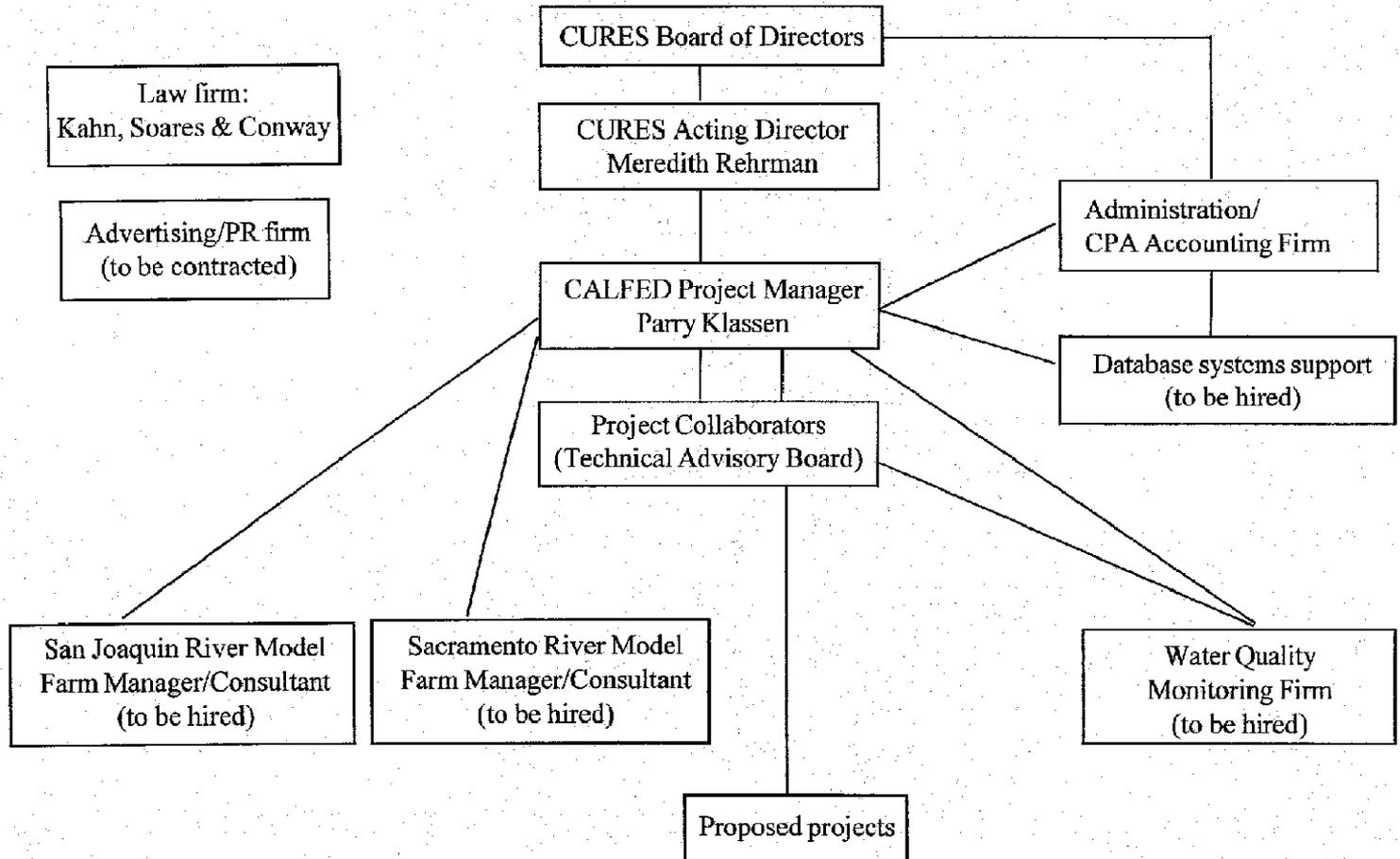
and around the country. In his current role with CURES, Mr. Klassen has written numerous articles about the surface water issue; made over a dozen presentation to farm groups in central California about water quality issues; written and produced stewardship guidebooks for farmers; written and produced educational slide shows on protecting water quality and stewardship of pesticide products; and assisted in the development of the CURES organization.

Mr. Klassen is also a life-long fruit grower, with his own family farm of peaches and nectarines located in Selma, CA. His was raised on a family fruit farm near Reedley, CA, and received a degree in Agricultural Communications for California State University, Fresno.

Meredith Rehrman, Acting Director, CURES

Ms. Rehrman has held agricultural communications positions for more than ten year. Ms. Rehrman's positions include Communications Director for the International Food Information Council, the Western Crop Protection Association, and CURES, where she has organized and managed: agricultural tours in California, Florida and New York for the mainstream media that showcase integrated pest management (IPM) practices; organized agricultural tours in California and Arizona for representatives of U.S. EPA and Cal-DPR, state government officials and media that showcase minor crops and minor use pesticides; and worked in media relations with the mainstream and agricultural trade press on pesticide-related issues. She has also served as statewide chair of pesticide/pest management issues for California Women for Agriculture; served on pesticide-related coalitions that included representatives from industry, government and academia; served as chair of the IPM Committee of the Western Crop Protection Association; served as editor/writer of the IPM Monitor, published by the National Foundation for IPM Education and financially supported by the US Department of Agriculture. Ms. Rehrman was raised on a family farm near Woodland, CA and holds a Masters Degree in Agriculture Communications from Cal Poly San Luis Obispo.

CALFED Project Program Organizational Chart



1-018188

1-018188

Compliance with Standard Terms and Conditions

In accordance with instructions, attached is a signed Non-Discrimination Compliance Statement and form for funding projects by the Federal Government.
There are no objections noted to the Standard Clauses – contract with public entities.

NONDISCRIMINATION COMPLIANCE STATEMENT

STD. 19 (REV. 3-95) FMC

COMPANY NAME

Coalition For Urban / Rural Environmental Stewardship

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

Parry Klassen

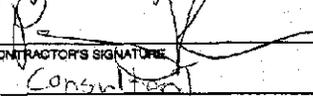
DATE EXECUTED

April 15, 1999

EXECUTED IN THE COUNTY OF

Sacramento

PROSPECTIVE CONTRACTOR'S SIGNATURE



PROSPECTIVE CONTRACTOR'S TITLE

Consultant

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

**APPLICATION FOR
FEDERAL ASSISTANCE**

OMB Approval No. 0348-0043

| | | | |
|--|-----------------------|--|-------------------------------------|
| 1. TYPE OF SUBMISSION: Application <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction Preapplication <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction | | 2. DATE SUBMITTED 4-15-99 | Applicant Identifier |
| | | 3. DATE RECEIVED BY STATE | State Application Identifier |
| | | 4. DATE RECEIVED BY FEDERAL AGENCY | Federal Identifier |
| 5. APPLICANT INFORMATION | | | |
| Legal Name: Coalition For Urban/Rural Environmental Stewardship | | Organizational Unit: | |
| Address (give city, county, State, and zip code): PO Box 348711 Sacramento, CA 95834-8711 | | Name and telephone number of person to be contacted on matters involving this application (give area code): Parry Klassen 559 325 9855 | |
| 6. EMPLOYER IDENTIFICATION NUMBER (EIN): 91-1839291 | | 7. TYPE OF APPLICANT: (enter appropriate letter in box) N | |
| 8. TYPE OF APPLICATION: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es) <input type="checkbox"/> <input type="checkbox"/> A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other (specify): | | A. State H. Independent School Dist. B. County I. State Controlled Institution of Higher Learning C. Municipal J. Private University D. Township K. Indian Tribe E. Interstate L. Individual F. Intermunicipal M. Profit Organization G. Special District N. Other (Specify) <u>Non-profit</u> | |
| | | 9. NAME OF FEDERAL AGENCY: CALFED | |
| 10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: Blank | | 11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Promoting Stewardship Practices to Reduce Non-Point Source Pollution from Production Agriculture & Urban Centers in the Sacramento/San Joaquin Watersheds | |
| 12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.): Butte, Colusa, Merced, Stanislaus, San Joaquin, Sacramento, Sutter, Yuba counties, CA | | | |
| 13. PROPOSED PROJECT | | 14. CONGRESSIONAL DISTRICTS OF: 2, 3, 4, 5, 11, 18 | |
| Start Date 7-99 | Ending Date 6-2002 | a. Applicant CURES | |
| 15. ESTIMATED FUNDING: | | b. Project West | |
| a. Federal | \$ | 00 | |
| b. Applicant | \$ | 00 | |
| c. State | \$ | 00 | |
| d. Local | \$ | 00 | |
| e. Other | \$ | 00 | |
| f. Program Income | \$ | 00 | |
| g. TOTAL | \$ | 00 | |
| | | 16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS? a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: DATE _____ b. No. <input type="checkbox"/> PROGRAM IS NOT COVERED BY E. O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW | |
| | | 17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT? <input type="checkbox"/> Yes If "Yes," attach an explanation. <input checked="" type="checkbox"/> No | |
| 18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED. | | | |
| a. Type Name of Authorized Representative Parry Klassen | | b. Title Consultant | c. Telephone Number 559 325 9855 |
| d. Signature of Authorized Representative | | e. Date Signed 4-15-99 | |

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Standard Form 424 (Rev. 7-97)
Prescribed by OMB Circular A-102



There is a growing concern about pesticides and nutrients from farming operations flowing into the Sacramento/San Joaquin Delta.

Catching the drift

A strategic plan to keep pesticides from reaching rivers and streams gains urgency in light of new restrictions

BY PARRY KLASSEN

George knows it's hard to get good spray coverage on his almond trees next to the river. So he drives extra slow, blasting the mist up and over the tree tops, with some of the spray drifting down into the river.

Downstream from where George is spraying, an automated water monitoring device gathers its hourly water sample from the river. The drift from George's application made 30 minutes earlier is detected by the device, which sounds an alarm at the county agriculture commissioner's office. An office staffer quickly pulls up the day's application permits and finds George's permit for spraying the almond orchard upstream from the monitor. By the time George pulls his tractor into the yard, a deputy from the ag commissioner's office is waiting.

This fictional account of a grower being caught for drifting pesticides into a river may seem a bit far-fetched. But if development of new surface water quality regulations continues at its current pace, ol' George could be facing

some aspects of this situation sooner than most farmers think.

In its broadest definition, George's spray drift contributed to what regulators call non-point source pollution. If George did a sloppy job mixing and loading his sprayer and rain later washes the residues into the river, that too is considered non-point source pollution. Runoff from irrigation or heavy rains also carries that designation if the runoff contains pesticides, nutrients or silt.

Non-point source pollution, be it from farms, ranches or urban centers, is now in the regulatory cross hairs, and in some instances, the trigger is being squeezed. Driving the issue is a myriad of federal and state laws and agencies, chief of which are the Clean Water Act and the U.S. Environmental Protection Agency (EPA).

In the tributaries flowing into the Sacramento/San Joaquin Delta, a growing concern is non-point source pollution made up of pesticides and nutrients originating from farming activities. And it's not just diazinon run-

off from dormant orchard sprays or herbicides from rice fields, two problems where significant advances have been made in recent years.

Water samples taken from Central Valley rivers and streams by the U.S. Geological Survey (USGS) showed more than 20 widely used insecticides, miticides and herbicides in the water. While none of the samples exceeded drinking water standards, some did exceed criteria for protection of aquatic life. These detections have gotten the attention of pesticide manufacturers, farm groups and regulators.

"The USGS numbers are a very good indication of what is out there and it should bring some concern to the agricultural community," says Doug Okumura, acting assistant director of the Division of Enforcement, Environmental Monitoring and Data Management at the California Department of Pesticide Regulation (DPR).

Concern is, in fact, an understatement. Driven by impending surface water regulations and increased activ-

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CATCHING THE DRIFT

continued from page 14

ist rumblings, a number of ag groups and government agencies have already initiated programs ranging from grower outreach efforts to organizing watershed working groups. Their goals focus on two areas: changing farming practices that might cause inadvertent non-point source pollution and protecting farmers who aren't contributing to the problem.

"The EPA and environmental community are really beginning to hone in on non-point source pollution, and there is an unsupported belief that agriculture is the only culprit," says Ronda Lucas, director of forestry and natural resources at the California Farm Bureau Federation. "To prove this, we want to provide farmers with whatever tools are necessary to assess their watersheds and identify potential problems. More importantly, we want farmers to get credit for what they are doing right by devising an easy monitoring plan that proves agriculture isn't the only culprit."

Tracing the origins of non-point source pollution then deciding how to regulate it is proving tougher than anyone could have imagined. The most significant surface water law is the Clean Water Act of 1972, which is implemented nationally by EPA. At the state level, the water quality enforcement falls to the State

and Regional Water Quality Control Boards. Since DPR is the lead agency for regulating pesticides in the state, an agreement was formed with the Water Board to let DPR take a lead role in solving the non-point source pollution problem as it relates to pesticides.

A key concept in the Clean Water Act is "Total Maximum Daily Load," better known as TMDL. A TMDL is a numeric target for pollutants or "stressors" that a water body is allowed to have. A TMDL is required when a body of water is determined to be "impaired." This impairment can be caused by silt, nutrients, temperature or pesticides — among other things — at levels out of compliance with the Clean Water Act. A TMDL, as its name indicates, is the total load from pollutants moving into a river each day by urban storm water discharges, wastewater treatment plants or non-point sources such as agriculture.

If a river or stream is deemed to be "impaired," a TMDL must be developed. Next, the plan to bring that water body back into compliance must also be developed and implemented.

That's where DPR is today with diazinon, an insecticide whose detection in the Sacramento and San Joaquin Rivers and several tributaries was traced back to drift and runoff from dormant orchard applications. During the development of TMDLs for diazinon, DPR wants to work with grower groups and others to develop mitigation measures, which could include Best Management Practices (BMPs), changes in the product label



Samples taken from Central Valley rivers and streams have revealed more than 20 widely used insecticides, miticides and herbicides in the water.

or other regulatory approaches to ensure the rivers are brought back into compliance. This will continue work to reduce diazinon detection levels started several years back by Novartis, the product manufacturer, and commodity groups, including the Almond Board and Cling Peach Advisory Board, when the problem was first discovered.

"Developing a TMDL is supposed to be a stakeholder-driven process," Okumura says. "It's going to be an arduous process and I'm hoping farmers and their representatives along with all other interested parties will attend the public meetings. Ultimately, the decisions are going to have an impact on farmers."

Since setting a TMDL for diazinon would be the first such standard developed for a pesticide in California or the country as a whole, DPR officials believe the process will serve as the tem-

plate for future TMDLs in the state. "We're hoping to use all the best science available to set that level," says Marshall Lee, associate environmental research scientist at DPR. To that end, Lee is overseeing development of a database at DPR that will serve as a repository for all reliable data on surface water sampling done in the state for diazinon and other products.

An unsettling development on TMDLs is a rash of lawsuits filed by activist groups intended to force EPA into creating TMDLs for dozens of rivers around the country, including some in California. To date, more than 25 lawsuits have been filed and of those resolved, all settled in favor of the complainant. Many fear that using litigation to form policy will force EPA to act too quickly on developing TMDLs, foregoing adequate and thorough scientific study in favor of expediency. To prevent such a reaction, farm and industry groups in recent months have begun formulating plans to get ahead of the issue before regulations are finalized.

One such plan under development by the California Farm Bureau is called the Nonpoint Source Initiative and Strategy 2000. This plan lays the framework for farmers to organize themselves into watershed working groups and begin gathering water quality data specific to their area.

"As we studied this issue, we found very little quantifiable, scientifically valid data about water quality and non-point source pollution," Lucas says. "What it's coming to is that farmers need this data to prove they are innocent. EPA and the public are pointing a finger at agriculture without the data to back it up. If we can't defend ourselves and show data that proves we are not guilty, we will be regulated."

Another effort under way to promote BMPs that help minimize off-site movement of pesticides and nutrients is sponsored by the Coalition For Urban/Rural Environmental Stewardship (CURES), a non-profit education organization established in 1997 as the stewardship arm of the Western Crop Protection Association (WCPA).

In addition to co-sponsoring grower meetings on the water quality issue with Farm Bureau, CURES is

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CATCHING THE DRIFT

continued from page 55

publishing booklets describing practices to help protect water quality. Subjects include mixing and loading pesticides, managing spray drift from air blast and ground application equipment, and controlling irrigation runoff. The group is also organizing sprayer calibration clinics in the Central Valley in conjunction with UC Cooperative Extension.

Okumura agrees that the word on protecting water quality needs to get out to farmers, and quick. "The education and outreach component is absolutely critical when we finalize the mitigation measures. One of our biggest problems is explaining the potential problem and the consequences of not following these mitigation measures."

Ranchers in the Garcia River region of Northern California got a taste of what can happen if TMDL development and implementation is forced by lawsuits. Environmental groups recently filed suit against EPA demanding that TMDLs be set for 17 rivers in California. Since the Garcia River was first on the list, the Northwest Regional Water Quality Control Board focused on that river as a test case. Recently, the Water Board presented ranchers and loggers with three yet-to-be-finalized options: stop all sediment discharge into the river; follow a basin-wide plan written by the Regional Water Quality Control Board staff that includes measures such as no commercial land management activities within 25 feet of the riparian area bordering the river and its tributaries and no use of heavy equipment between Oct. 15 and May 1; or each landowner submit a plan that includes extensive water monitoring, detailed description of remediation efforts, annual progress reports, and public access to those records. And the Water Board must first approve the plan before it can be implemented.

Where Farm Bureau hopes to help farmers in other regions of the state is in organizing watershed working groups that can prepare for the inevitable TMDL steamroller. Key leaders in this effort include Lucas, Carolyn Richardson, director of the Department of Environmental Advocacy, and Tess Dennis, director of environmental protection, all three who are Farm Bureau water experts based in Sacramento.

"We hope to provide farmers and ranchers all the technical and informational tools they need to fix the problem themselves," Lucas says. A first step is studying a "how-to" manual

available at every county Farm Bureau office in the state, she adds. This manual provides contact information of local water quality experts and describes how to form the watershed working group.

Many experts believe that use of BMPs could go a long way to reduce non-point source pollution into surface waters. In fact, one USDA agency provides not only expertise in BMPs but has some funding available for farmers to implement the practices. "We work best management practices into every conservation plan we write," says Michael McElhiney, Stanislaus County conservationist for the USDA-Natural Resources Conservation District. "These plans alone have a lot of value, especially if someone points a finger at you about a certain farming practice." Conservation plans include detailed description of everything from irrigation practices to how pesticides are handled and applied.

Last year, growers and ranchers in Stanislaus, San Joaquin and Merced counties received more than \$600,000 in funding from the Environmental Quality Incentive Program (EQIP). McElhiney encourages growers to apply for those limited funds to help defray the cost of changing farming practices.

"We have a whole suite of BMPs that meet a variety of conditions that exist on a farm. They may not solve all the problems but if we can get stewardship ingrained into farmers, we know the trend will get better," McElhiney says.

So, can growers and ranchers avoid this approaching surface water storm in California? A water expert with Dow Agro Sciences who has followed the issue around the country for years offers an unqualified "no way." However, there is a chance to soften the impact.

"If growers and industry get engaged early, they can help shape the process, avoiding a strictly regulatory solution," says Dr. Bryan Stuart, manager of government relations for Dow AgroSciences in Sacramento. "But two important things need to happen quickly. First, we need to make sure that good science is used as these regulatory decisions are made. Second, we need to start implementing practices to reduce the amount of pesticides getting into surface water. And that effort has to begin now."

Parry Klassen is a farm writer and consultant based in the San Joaquin Valley. He consults with farmers on behalf of CURES to protect water quality and implement application stewardship. Editor Len Richardson is chair of the CURES Board of Directors. ♦

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